

Dryopteris carthusiana

toothed wood fern

Dryopteridaceae (Wood Fern Family)

Status: State Review Group 1

Rank: G5S2

General Description: Adapted from the Flora of North America (1993): The stalk of this fern is $\frac{1}{4}$ - $\frac{1}{3}$ the length of the leaf and scaly at the base. The fronds are light green, coarsely cut, relatively narrow, ovate-lanceolate in outline, and 6 to 30 in. (1.5-7.6 dm) long by 4 to 12 in. (1-3 dm) wide. The leaves are not persistent, except in years with mild winters. The leaflets are lanceolate-oblong; the lower leaflets are more lanceolate-triangular and are slightly reduced. The leaflet margins are serrate and the teeth spiny. Sori (spore clusters) are midway between the midvein and margin of segments.

Identification Tips: Three other species of *Dryopteris* occur in this region, including *D. arguta*, *D. filix-mas*, and *D. expansa*, although only *D. expansa* has been found in association with *D. carthusiana*. *D. carthusiana* is distinguished from *D. expansa* by the color and shape of the frond. *D. carthusiana* has a duller, light green color, while *D. expansa* has a glossier, dark green frond color. *D. carthusiana* has a relatively narrow and ovate-lanceolate blade. *D. expansa* typically has a triangular shaped blade, with the lowest leaflets distinctly larger than succeeding pairs. The lowest leaflets of *D. carthusiana* blades are little, if any, larger than adjacent pairs and less deeply dissected than *D. expansa* tends to be. No hybrids between these two have been found. A technical key is recommended for identification.

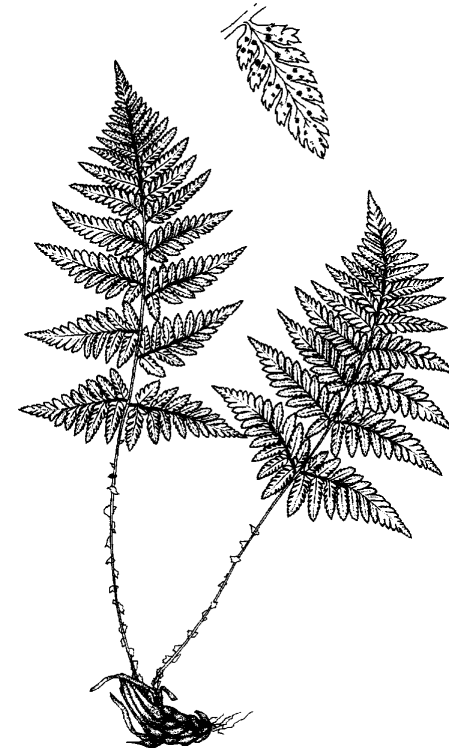
Phenology: This species is identifiable May through October, or throughout the year if fronds persist.

Range: This species is circumboreal and scattered throughout northern North America and in western Eurasia. In Washington it is known from King and Pend Oreille County.

Habitat: *Dryopteris carthusiana* has been found at elevations from 0 to 75 ft in Washington. While this species typically has a broad habitat throughout its range, in Washington, it has only been found in sphagnum swamps. It grows in openings amongst thickets with a peat substrate and with *Sphagnum* spp. and other mosses as the dominant ground cover. Associated species include Douglas spirea (*Spiraea douglasii*), western crabapple (*Pyrus fusca*), smooth ledum (*Ledum landulosa*), cat-tail (*Typha latifolia*), vine maple (*Acer*

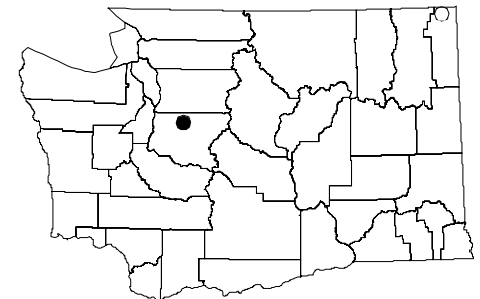
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Known distribution of
Dryopteris
carthusiana
in Washington



● Current (1980+)
○ Historic (older than 1980)

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circinatum), lady fern (*Athyrium filix-femina*), false lily-of-the-valley (*Maianthemum dilatatum*), and spreading wood fern (*Dryopteris expansa*).

Ecology: *Dryopteris carthusiana* appears to be restricted to acidic swamp habitats in this area, although this species may occur in a wider variety of habitats in other portions of its range. *Dryopteris carthusiana* is a tetraploid species that is believed to be the result of a hybridization between *D. intermedia* and a hypothetical ancestral species, *D. semicristata*.

State Status Comments: *Dryopteris carthusiana* is at the periphery of its range in Washington, where there are less than twenty occurrences. More information is needed to assign a state status to this species.

Inventory Needs: Sphagnum swamps throughout the state should be investigated.

Threats and Management Concerns: The greatest threat to *Dryopteris carthusiana* is hydrologic alteration.

Comments: *Dryopteris carthusiana* is also known as *Dryopteris austriaca* (Jacq.) Woy. var. *spinulosa* (OF.Müll) Fiori, as found in Hitchcock (1969), and *Dryopteris spinulosa* Roth.

References:

Flora of North America Editorial Committee, eds. 1993. *Flora of North America North of Mexico. Volume 2: Pteridophytes and Gymnosperms*. Oxford University Press, New York. 475pp.

Hitchcock, C.L., A. Cronquist, M. Ownbey, J.W. Thompson. 1969. *Vascular Plants of the Pacific Northwest Part 1: Vascular Cryptogams, Gymnosperms, and Monocotyledons*. University of Washington Press, Seattle, WA. 914 pp.

Kartesz, J.T. 2004. *Synthesis of North American Flora*. Phylosystems Corporation. 1.996.

Lellinger, D.B. *A Field Manual of the Ferns and Fern-Allies of the United States and Canada*. 1985. Smithsonian Institution Press, Washington, D.C. 389pp.